

INTERNATIONAL PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:
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PCT

WRITTEN OPINION

(PCT Rule 66)

Applicant's or agent's file reference SURFP001.P		Date of Mailing (day/month/year) 21 DEC 2001
International application No. PCT/US00/15841		REPLY DUE within 2 months/days from the above date of mailing
International filing date (day/month/year) 07 June 2000 (07.06.2000)	Priority date (day/month/year) 08 June 1999	
International Patent Classification (IPC) or both national classification and IPC IPC(7): G06K 9/00, 9/40 and US Cl.: 348/233, 250, 375; 382/167, 245, 246, 249		
Applicant LIGHTSURF		

1. This written opinion is the first (first, etc.) drawn by this International Preliminary Examining Authority.
2. This opinion contains indications relating to the following items:
 - I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2 (a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application

3. The applicant is hereby **invited** to reply to this opinion.

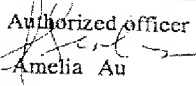
When? See the time limit indicated above. ~~The applicant may, before the expiration of that time limit, request this Authority to grant an extension. See rule 66.2(d).~~

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 *bis*.
For an informal communication with the examiner, see Rule 66.6

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.

4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 09 October 2001 (09.10.2001)

Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703)305-3230	Authorized officer  Amelia Au Telephone No. (703) 305-8576
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WRITTEN OPINION

International application No.

PCT/US00/15841

I. Basis of the opinion

1. With regard to the **elements** of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
pages 2,4-5,10,12,16-17,22,26 and 30-33, as originally filed
pages 1,3,6-9,11,13-15,18-21,23-25,27-29, filed with the demand
pages NONE, filed with the letter of _____
- ☒ the claims:
pages 35-43, as originally filed
pages NONE, as amended (together with any statement) under Article 19
pages NONE, filed with the demand
pages NONE, filed with the letter of _____
- ☒ the drawings:
pages 1-11, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____
- ☐ the sequence listing part of the description:
pages NONE, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the written opinion was drawn on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages NONE
- ☐ the claims, Nos. NONE
- ☐ the drawings, sheets/fig NONE

5. ☐ This opinion has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed."

WRITTEN OPINION

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V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. STATEMENT

Novelty (N)	Claims <u>NONE</u>	YES
	Claims <u>1-68</u>	NO
Inventive Step (IS)	Claims <u>NONE</u>	YES
	Claims <u>1-68</u>	NO
Industrial Applicability (IA)	Claims <u>NONE</u>	YES
	Claims <u>1-68</u>	NO

2. CITATIONS AND EXPLANATIONS

Please See Continuation Sheet

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

TIME LIMIT:

The time limit set for response to a Written Opinion may not be extended. 37 CFR 1.484(d). Any response received after the expiration of the time limit set in the Written Opinion will not be considered in preparing the International Preliminary Examination Report.

V. 2. Citations and Explanations:

Claims 1, 3-14, 18-21, 23-34, 38-41, 43-54, 58-62, and 64-68 lack inventive steps under PCT Article 33(3) as being obvious over US 5848193 to Garcia in view of US 5818525 to Elabd.

As to claim 1, Garcia discloses a method for distributed digital image processing, the method comprising:
recording luminosity information at a first device (digital camera), for representing an image that has been digitally captured at the first place (Fig. 1 element 22);

generating luminosity information at the first device by applying a wavelet transform (Fig. 1 element 22), quantization (col. 14 line 32) to the luminosity information (col. 3 lines 17-65);

Garcia does not explicitly mention compression.

Elabd, in an analogous environment, discloses

generating compressed luminosity information by applying wavelet transform, quantization, and compression (Fig. 7, abstract, col. 4 lines 15-col. 5 line 49);

transmitting said compressed luminosity information to a second device (storage or display) (Fig. 7 and 9);

restoring said luminosity information from said compressed luminosity information at the second device (Figs. 7 and 9, col. 6 lines 10-31); and

converting said luminosity information at the second device into a color image (Fig. 9, col. 6 lines 10-32).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the compression scheme in the method of Garcia in order to process color images and speed up data transmission.

As to claim 3, Garcia further discloses light-level (intensity) information for representing an image that has been digitally captured at the first device (col. 3 lines 17-20).

As to claims 4-6, the combination of Garcia and Elabd does not explicitly mention binary, run-length, and Huffman encoding.

However, the Examiner takes Official Notice that binary, run-length, and Huffman encoding are notoriously well known in the art.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the compression scheme in the method of Garcia in order to process color images and speed up data transmission.

As claim 7, Elabd further discloses reversing said compression that occurred at the first device (col. 6 lines 10-67).

As to claim 8, Elabd further discloses wire-based transmission (Fig. 9).

As to claim 9, Elabd further discloses serial communication port (Fig. 9).

As to claims 10-14, Elabd further discloses interpolating color information for the image (Fig. 7), RGB color conversion (Fig. 7, note YUV is inherent conversion from RGB color space), and JPEG compression (col. 4 lines 15-67).

As to claim 18-20, the combination of Garcia and Elabd does not mention transmitting a lower quality representation of the image captured in first place and converting into a higher-quality image at second device.

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

However, the Examiner takes Official Notice that transmitting lower quality such as lower resolution image in the network and converting the lower quality image into higher quality image such full resolution image at one terminal are notoriously well known in the art.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the converting scheme in the method of Garcia in order to process color images and speed up data transmission.

As to claims 21, 23-34, the discussion is addressed with regard to claim 1 and claim 3-14.

As to claims 38-40, the discussion is addressed with regard to claims 18-20.

As to claims 41, 43-54, the claims are corresponding system claims to 1, 3-14. the discussion is addressed with regard to claims 1, 3-14.

As to claims 58-60, the claims are corresponding system claims to 18-20. the discussion is addressed with regard to claims 18-20.

As to claims 61-62, Garcia further discloses a digital camera and a computer (Fig. 1).

As to claim 64, the Examiner takes Official Notice that CMOS image sensor is notoriously well known in the art.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the sensor in the method of Garcia in order to process color images.

As to claim 65, Elabd further discloses CCD image sensor (abstract).

As to claim 66, Elabd further discloses processing gray level information (col. 4 lines 23-25).

As to claim 67, Garcia further discloses a wavelet transform engine to compress (Fig. 1).

As to claim 68, Elabd further discloses compressed luminosity information (Fig. 7).

Claims 15, 17, 37, and 57 lack inventive steps under PCT Article 33(3) as being obvious over the prior art as applied in the immediately preceding paragraph and further in view of US 5913088 to Moghadam et al. ("Moghadam").

As to claims 15 and 17, the combination of Garcia and Elabd does not mention packet-based communication and Internet.

Moghadam, in an analogous environment, discloses a camera (first device) connected to Internet (which uses packet-based communication) (Fig. 3).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the wireless communication scheme of Moghadam1 in the method of Garcia in order to increase the productivity of photographing and reduce the memory of the camera.

As to claim 37, the discussion is addressed with regard to claim 15.

As to claim 57, the claim is corresponding system claim to 15. the discussion is addressed with regard to claim 15.

Claims 2, 16, 22, 35-36, 42, 55-56, and 63 lack inventive steps under PCT Article 33(3) as being obvious over the combination of Garcia and Elabd and further in view of US 5917542 to Moghadam et al ("Moghadam1").

As to claims 2, and 16, the combination of Garcia and Elabd does not mention wireless transmission.

Moghadam1, in an analogous environment, discloses wireless communication link via cellular phone network between a digital camera and an image server (Fig. 1, col. 1, lines 12-64, col. 2, lines 30-50).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the wireless communication scheme of Moghadam1 in the method of Garcia in order to increase the productivity of photographing and reduce the memory of the camera.

As to claims 22, 35-36, the discussion is addressed with regard to claim 2, 15-16.

As to claims 42, 55-56, the claims are corresponding system claims to 2, 15-16. the discussion is addressed with regard to claims 2, 15-16.

As to claim 63, Moghadam1 further discloses a server computer (col. 2 lines 30-50).

----- NEW CITATIONS -----

US 5,848,193 A (GARCIA) 08 December 1998.

US 5,815,525 A (ELABD) 06 October 1998.

5818,525

WRITTEN OPINION

International application No.

PCT/US00/15841

VI. Certain document cited

1. Certain published documents (Rule 70.10)

Application No Patent No.	Publication Date (day/month/year)	Filing Date (day/month/year)	Priority date (valid claim) (day/month/year)
US 5,913,088 A	15 JUNE 1999	06 SEPTEMBER 1996	NONE
US 5,917,542 A	29 JUNE 1999	18 FEBRUARY 1997	NONE

2. Non-written disclosures (Rule 70.9)

Kind of non-written disclosure	Date of non-written disclosure (day/month/year)	Date of written disclosure referring to non-written disclosure (day/month/year)
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